Allen-Bradley

Kinetix 5500 AC Line Filters

Catalog Numbers 2198-DB08-F, 2198-DB20-F, 2198-DB42-F

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About the AC Line Filters

This publication provides installation instructions for the AC line filters used with Kinetix® 5500 servo drives. Use these instructions for installing and wiring your AC line filter. For more information on installing and wiring your Kinetix 5500 drive, refer to the Kinetix 5500 Servo Drives User Manual, publication 2198-UM001.

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (Publication SGI-1.1 available from your local Rockwell Automation® sales office or online at http://www.rockwellautomation.com/literature/) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

	WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
	ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard and recognize the consequences.
	SHOCK HAZARD: Labels may be on or inside the equipment, for example, drive or motor to alert people that dangerous voltage may be present.
	BURN HAZARD: Labels may be on or inside the equipment, for example, drive or motor to alert people that surfaces may reach dangerous temperatures.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.

Before You Begin

For general guidelines when laying out your panel and mounting your AC line filter, refer to the System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001.

For guidelines specific to your application, refer to the Kinetix 5500 Servo Drives User Manual, publication 2198-UM001.

ATTENTION: To avoid personal injury or damage to equipment due to hazardous voltages, follow these guidelines when installing your AC line filter. NEC and local regulations always take precedence.

- Disconnect mains power prior to installation.
- Verify that the rated voltage is compatible with the local supply voltage.
- Connect the earth ground connection first when making connections.

Install the AC Line Filter

Mount the line filter to the cabinet panel with hardware as specified in the table below.

Cat. No.	Mounting Bolts	Torque Value N•m (lb•in)
2198-DB08-F	M5 (#10-32)	2.0 (17.7)
2198-DB20-F		
2198-DB42-F	M6 (1/4x20)	4.5 (39.8)

Refer to the System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001, for proper high-frequency (HF) bonding techniques to improve overall system performance.

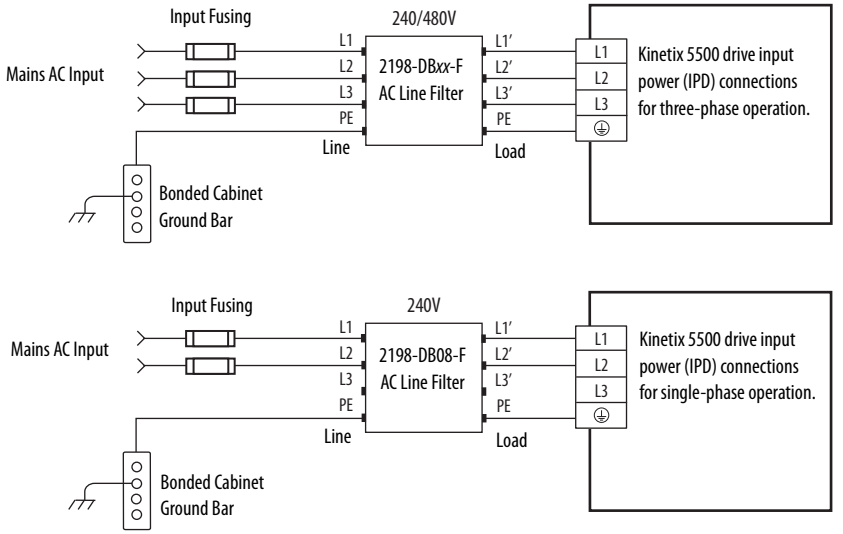
Wire the AC Line Filter

Wire should be copper with 75 °C (167 °F) minimum rating. Phasing of main AC power is arbitrary and earth ground connection is required for safe and proper operation.

IMPORTANT	The National Electrical Code and local electrical codes take precedence over the values and methods provided.

IMPORTANT	When wiring the line filter for single-phase operation, do not make connections to the L3 terminals. Line and load designations must be observed to meet product specifications.

Wiring Examples for the AC Line Filter



Wiring Specifications

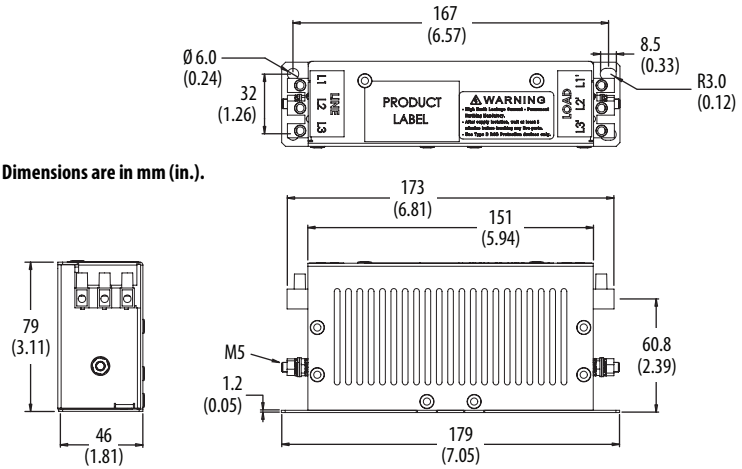
Kinetix 5500 Drive Cat. No.	Line Filter Cat. No.	Connects to Terminals		Recommended (1) Wire Size mm², AWG	AC Line Filter Strip Length mm (in.)	Terminal Torque Values N•m (lb•in)
		Pin	Signal			
2198-H003-ERS	2198-DB08-F (2)	IPD-1 IPD-2 IPD-3 IPD-4	L1 L2 L3 ⏚	1.5…4 (16…12)	7.5 (0.30)	0.8 (7.1)
2198-H008-ERS						
2198-H015-ERS						
2198-H025-ERS	2198-DB20-F				9.0 (0.35)	2.0 (17.7)
2198-H040-ERS						
2198-H070-ERS	2198-DB42-F			1.5…6 (16…10)	12.0 (0.47)	

(1) The actual gauge of the input power wiring depends on the system configuration. Consult your machine builder, the NEC, and applicable local codes.

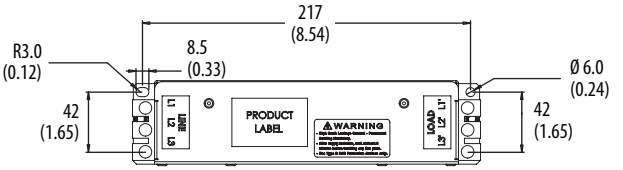
(2) Applies to installations with single-phase or three-phase input power.

AC Line Filter Dimensions

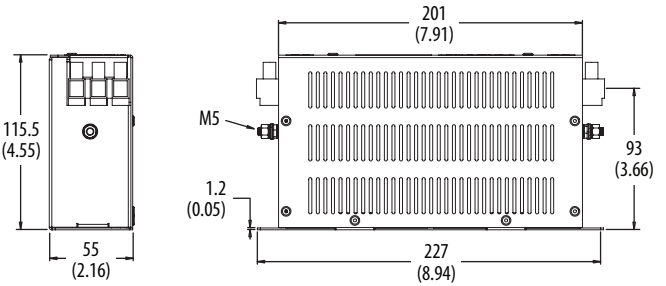
AC Line Filter Dimensions (catalog number 2198-DB08-F)



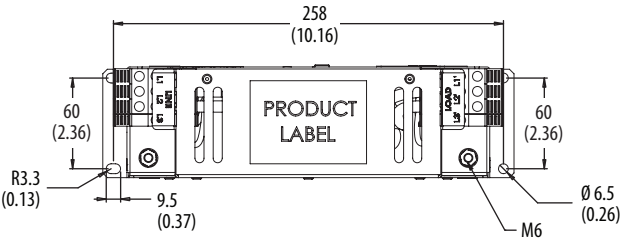
AC Line Filter Dimensions (catalog number 2198-DB20-F)



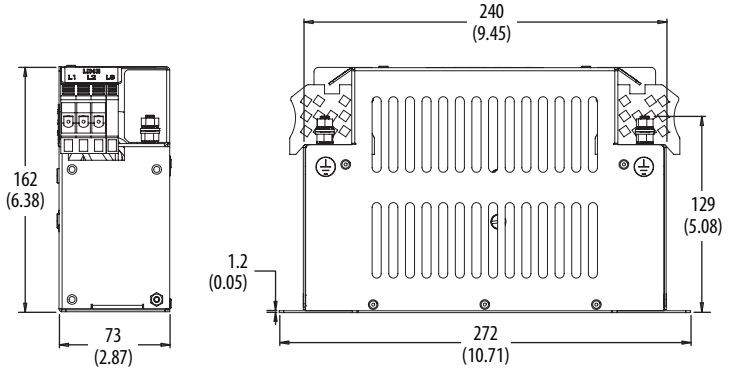
Dimensions are in mm (in.).



AC Line Filter Dimensions (catalog number 2198-DB42-F)



Dimensions are in mm (in.).



AC Line Filter Specifications

Cat. No.	Voltage Rating	Current Rating A @ 50 °C (122 °F)	Power Loss W	Leakage Current mA	Weight, approx kg (lb)	Operating Temperature
2198-DB08-F	480V AC (1) three-phase 50/60 Hz	7.5	5.2	2.5	0.77 (1.70)	0…50 °C (32…122 °F)
2198-DB20-F		20	9.3	5.2	1.63 (3.59)	
2198-DB42-F		42	11.1	4.0	2.70 (5.95)	

(1) Tolerance for this value is +10%.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Kinetix 5500 Servo Drives User Manual, publication 2198-UM001	Information on installing, configuring, starting, and troubleshooting your Kinetix 5500 servo drive system.
System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001	Information, examples, and techniques designed to minimize system failures caused by electrical noise.
EMC Noise Management DVD, publication GMC-SP004	
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at http://www.rockwellautomation.com/literature. To order paper copies of technical documentation, contact your local Allen-Bradley® distributor or Rockwell Automation sales representative.

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.
At http://www.rockwellautomation.com/support, you can find technical manuals, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools. You can also visit our Knowledgebase at http://www.rockwellautomation.com/knowledgebase for FAQs, technical information, support chat and forums, software updates, and to sign up for product notification updates.

For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect[sm] support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit http://www.rockwellautomation.com/support/.

Installation Assistance

If you experience a problem within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/support/americas/phone_en.html, or contact your local Rockwell Automation representative.

New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication RA-DU002, available at http://www.rockwellautomation.com/literature/.

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